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determinants is sufficient may omit Chapter XIV in which determinants are more extensively treated. In Chapter XI the treatment of mathematical induction is particularly commendable for the way in which it emphasizes both parts of the proof; namely, the direct verification of the theorem for the smallest admissible value of the integer, and the proof that if the theorem is true for one value of the integer, it is true for the next greater value.

In Chapter XII the concrete geometrical treatment of complex numbers is noteworthy. However, for students who have not studied trigonometry, articles 134–138, which involve the polar representation of complex numbers and their consequences, must be omitted.

In the last chapter the treatment of infinite series does not seem to belong to such an elementary text. It would seem preferable to omit it, and give a little broader discussion of "Limit," in Chapter IX, in treating infinite geometric series. The author's omission of the symbol for infinity and the word infinity itself, except as it is implied in the phrase "infinite series," in order to avoid the misinterpretation of ∞ as a definite, fixed number, seems very undesirable. The symbol is so convenient and is used so much in all mathematical literature, that the remedy against its misinterpretation is not to omit the symbol or word, but to retain it and give it the proper meaning.

The introduction of some of the principles and problems of analytic geometry is a desirable innovation in this text where graphical methods are used freely. In general, the book is by no means radical either in treatment or subject matter, and it will probably find favor with many teachers.

H. L. SLOBIN.

PROBLEMS AND QUESTIONS.

REMARKS BY THE MANAGING EDITOR.

The solutions of problems have not come in as promptly during the vacation season as at other times of the year. Hence none are given in this issue, those on hand being held over till November, when it is hoped that a full supply will be ready.

An examination of the problems proposed during this year, and of the solutions given, reveals the fact that, for the most part, solutions are not forthcoming until several months after the problems are proposed, showing that there is an *abiding interest* among the readers of the MONTHLY in these problems and that, even when solutions are not sent in immediately, they may still be expected later on.

Below is given an analysis of the situation so far as concerns the present year. We are glad to publish solutions of problems whenever they may have been proposed, but we are especially anxious to clear up by December, if possible, those thus far proposed this year, and we would urge all who are interested in this department to send in solutions to the Committee as promptly as may be.

In the ALGEBRA list, there have been proposed so far this year problems 383–395 inclusive, but solutions have been received for 383 and 384 only. The other solutions received and printed were for 376–380 inclusive, which were proposed last year.

In GEOMETRY, the problems proposed this year are 412–423 inclusive, and of these solutions have been received for 412, 413, 414 only. The other solutions published this year are 392, 407–409, and 411.

In CALCULUS, problems 334–344 inclusive have been proposed this year, but none of these have been solved so far—at least no solutions have been received. However, solutions for 326 and 328–331, proposed last year, have been received and published.

In MECHANICS, problems 271–279 inclusive have been proposed this year, and none of them have been solved. The solutions published are for 250, 263 and 265 which were proposed last year. Under this heading note especially that a mistake in numbering has crept in; namely, in the June issue the numbers should be 276 and 277 instead of 271 and 272, and in the September issue they should be 278 and 279 instead of 273 and 274.

In NUMBER THEORY, the problems proposed this year are 187–196 inclusive, and no solutions for any of these have been received, the only one being for 185 proposed last year. Here, again, there is a mistake in numbering in the June and September issues. These numbers should be 191–196 instead of 187–192. Readers will please make these corrections and refer to these problems accordingly.

There are, therefore, still to be solved eleven problems in Algebra, nine in Geometry, eleven in Calculus, nine in Mechanics, and seven in Number Theory, making a total of 47 problems proposed this year and not solved. In addition to these there are some still remaining from last year which may be considered by any one interested. It should be said that solutions are in hand and not yet printed for Algebra 386 and Geometry 415, 416. Manifestly, it would be impossible to print the solutions of all outstanding problems in the November and December issues, but we will give the largest possible space for this purpose and will be pleased with an overflow for this department which is "everybody's department."

In this connection, the Managing Editor may be permitted to ask for cooperation on some matters of importance to him in saving time and making the solutions of problems appear in the best possible form. Will contributors please exercise care in regard to the following points in the preparation of manuscripts:

(1) Please *state the problem* as well as give its number and the name of the proposer, so that the readers may have a complete presentation before them on the printed page.

(2) If any figures are involved, please draw them *accurately on a separate sheet* for the use of the engraver, putting a rough sketch in the manuscript for use of the editors.

(3) Please give attention to *paragraphing and spacing*, especially where matter is to be displayed on the printed page, so that the compositor may see at a glance what form is desired.

(4) Please be as *concise and brief* as is consistent with clearness, omitting the more obvious details but emphasizing the important steps.

(5) Please write *clearly and on one side only* of a sheet of paper and put *not more than one* solution on the same sheet.

In conclusion, attention is called to the statement made in the January issue under the heading "Problems and Questions," where the hope was expressed that in time this department might become useful in throwing light upon real difficulties arising in connection with actual work in which we are engaged. Some problems proposed are of this character and it is hoped that still more may be in this line. In order to encourage such questions, in cases where it is not convenient to formulate a problem, and where the questioner may not care to advertise his difficulty, the editors will provide a section of miscellaneous questions and answers (withholding the names of both questioners and answerers when so requested). Such questions might well refer, for example, to the selection of subject matter and method of presentation in courses in collegiate mathematics, and they might elicit replies in the form of a short symposium or they might even lead in some cases to extended articles. On the other hand, these questions might refer to difficulties of interpretation or to obscure steps in some demonstration or to anything whatsoever of mathematical import on which the questioner honestly seeks light. We may not be able to answer all such questions, but, at least, we will try to do so or to find some one who can. Communications for the department of "Miscellaneous Questions" may be sent directly to the Managing Editor, or preferably to Professor R. D. Carmichael, Indiana University, Bloomington, Ind., who will have this special department in charge. Of course all such communications should be signed but the names will be withheld from publication if so requested.

NOTES AND NEWS.

Florian Cajori, Chairman of the Committee.

The attention of all is called to the remarks of the Managing Editor under the heading "Problems and Questions" of this issue.

Mr. F. E. Carr, who is instructor in mathematics in Oberlin College, will spend next year on leave of absence in graduate study at the University of Chicago.

Professor Gordon N. Armstrong, of Ohio Wesleyan University, who last March passed successfully his examination for the degree of doctor of philosophy at the Technische Hochschule in Munich, spent the second semester traveling in Europe and in visiting one or two of the more important universities in Germany.

In the *Journal of the Washington Academy of Sciences* (Vol. III, June 19, 1913) C. E. Van Orstrand publishes tables of the exponential functions, e^x, e^{-x}, for $x = 0.0$ to $x = 32.0$, to either 20 decimals or 20 (sometimes more) significant figures.